CLAIMS

What is claimed is:

1.   In a computing environment, a method to represent a weld bead to be used to weld a plurality of components of an article of manufacture together at one or more

5   edges of the components in the manufacturing of the article outside the computing environment, the method comprising:

generating within the computing environment, an initial set of one or more data representations of an initial set of one or more wire bodies based on one or more data representations of the one or more edges respectively to synthesize one

10   or more corresponding wire bodies for the one or more edges; and

generating within the computing environment, a final data representation of a final wire body based on the initial set of one or more data representations of the initial set of one or more wire bodies of the one or more edges, with the final data representation of the final wire body to be initialized as a data representation of the

15   weld bead.

2.   The method of claim 1, wherein the method further comprises facilitating within the computing environment, selection of one of the one or more edges, including causing one or more tracking attributes to be associated with the selected edge within the computing environment, with the tracking attributes specifying at

20   least the one or more tracking attributes are to be propagated during each of a split, copy and merge operation performed within the computing environment on the selected edge.

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3.   The method of claim 2, wherein the one or more tracking attributes include a unique index, i, incremented for each edge.

4.   The method of claim 2, wherein the method further comprises calling a shape manager of the computing environment to replicate one of the selected one or more

5   edges.

5.   The method of claim 1, wherein the generating within the computing environment, an initial set of one or more data representations of one or more wire bodies comprises calling a shape manager of the computing environment to synthesize a wire body for one of the one or more edges.

10   6.   The method of claim 1, wherein the generating within the computing environment, a final data representation of a final wire body comprises

setting within the computing environment, one of the initial set of one or more data representations of the initial one or more wire bodies as the final data representation of the final wire body, if the initial set of one or more data

15   representations of the initial one or more wire bodies is consist of only one data representation of one wire body; and

uniting within the computing environment, the initial set of one or more data representations of the initial one or more wire bodies to form the final data representation of the final wire body, if the initial set of one or more data

20   representations of the initial one or more wire bodies comprises more than one data representation of more than one wire body.

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7.   The method of claim 1, wherein the method further comprises initializing within the computing environment, the final data representation of the final wire body as the data representation of the weld bead.

8.   The method of claim 7, wherein the method further comprises facilitating specification within the computing environment, welding parameters of the weld bead.

9.   The method of claim 7, wherein the method further comprises facilitating persistent attribute assignment within the computing environment, a name for an edge of the weld bead.

10.   The method of claim 9, wherein the persistent attribute assignment comprises retrieving from a source within the computing environment, one or more identifications identifying an edge of the one or more edges of the one or more components, including the component to which the edge is a part, associated with the edge of the weld bead.

11.   In a computing environment, a method of operation comprising:

selecting within the computing environment, an edge of a weld bead whose data representation is formed based on one or more data representations of one or more edges of one or more components of an article of manufacture to be welded together using the weld bead at the one or more edges when manufacturing the article;

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retrieving from a source within the computing environment, one or more

identifications identifying an edge of the one or more edges of the one or more

components, including the component to which the edge is a part, associated with

the edge of the weld bead;

5   forming within the computing environment, a name attribute based at least in

part on the retrieved one or more identifications; and

assigning within the computing environment, the name attribute to the

selected edge of the weld bead.

12.   The method of claim 11, wherein

10   the retrieving is repeated for each edge of each component associated with

the edge of the weld bead; and

the forming is based at least in part on all the retrieved identifications.

13.   The method of claim 11, wherein the selecting, retrieving, forming and

assigning are repeated for each edge of the weld bead.

15   14.   A machine readable article comprising

a machine readable storage medium; and

a plurality of machine executable instructions stored in the machine readable

storage medium, with the instructions designed to enable a apparatus to

generate within apparatus, an initial set of one or more data

20   representations of an initial set of one or more wire bodies based on

one or more data representations of one or more edges of one or more

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components of an article of manufacture respectively to synthesize one

or more corresponding wire bodies for the one or more edges, the one

or more components to be welded together using a weld bead at the

one or more edges when the article is manufactured; and

5   generate within apparatus, a final data representation of a final wire body

based on the initial set of one or more data representations of the initial

set of one or more wire bodies of the one or more edges, the final data

representation of the final wire body to be initialized as a data

representation of the weld bead.

10   15.   The machine readable article of claim 14, wherein the instructions are further

designed to facilitate within the apparatus, selection of one of the one or more

edges, including causing one or more tracking attributes to be associated with the

selected edge within the apparatus, with the tracking attributes specifying at least

the one or more tracking attributes are to be propagated during each of a split, copy

15   and merge operation performed within the apparatus on the selected edge.

16.   The machine readable article of claim 14, wherein the instructions are further

designed to perform the generating within the apparatus, an initial set of one or more

data representations of one or more wire bodies by calling a shape manager of the

apparatus to synthesize a wire body for one of the one or more edges.

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17.   The machine readable article of claim 14, wherein the instructions are further designed to generate within the apparatus, a final data representation of a final wire body by

setting within the apparatus, one of the initial set of one or more data

5   representations of one of the initial one or more wire bodies as the final data representation of the final wire body, if the initial set of one or more data representations of the initial one or more wire bodies is consist of only one data representation of one wire body; and

uniting within the apparatus, the initial set of one or more data representations

10   of the initial one or more wire bodies to form the final data representation of the final wire body, if the initial set of one or more data representations of the initial one or more wire bodies comprises more than one data representation of more than one wire body.

18.   The machine readable article of claim 14, wherein the instructions are further

15   designed to initialize within the apparatus, the final data representation of the final wire body as the data representation of the weld bead.

19.   The machine readable article of claim 18, wherein the instructions are further designed to facilitate specification within the apparatus, welding parameters of the weld bead.

20.   The machine readable article of claim 18, wherein the instructions are further

designed to facilitate persistent attribute assignment within the apparatus, a name

for an edge of the weld bead.

21.   An apparatus comprising:

5   storage medium having stored therein a plurality of instructions designed to

enable the apparatus to

                generate within apparatus, an initial set of one or more data

                        representations of an initial set of one or more wire bodies based on

                        one or more data representations of one or more edges of one or more

10   components of an article of manufacture respectively to synthesize one

                        or more corresponding wire bodies for the one or more edges, the one

                        or more components to be welded together using a weld bead at the

                        one or more edges when the article is manufactured; and

                generate within apparatus, a final data representation of a final wire body

15   based on the initial set of one or more data representations of the initial

                        set of one or more wire bodies of the one or more edges, the final data

                        representation of the final wire body to be initialized as a data

                        representation of the weld bead; and

                a processor coupled to the storage medium to execute the instructions.

20 22.   The apparatus of claim 21, wherein the instructions are further designed to

enable the apparatus facilitate selection, within the apparatus, one of the one or

more edges, including causing one or more tracking attributes to be associated with

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the selected edge within the apparatus, with the tracking attributes specifying at least the one or more tracking attributes are to be propagated during each of a split, copy and merge operation performed within the apparatus on the selected edge.

23.   The apparatus of claim 22, wherein the one or more tracking attributes

5   include a unique index, i, incremented for each edge.

24.   The apparatus of claim 22, wherein the apparatus further comprises a shape manager, and the instructions are further designed to call the shape manager to replicate one of the selected one or more edges.

25.   The apparatus of claim 21, wherein the apparatus further comprises a shape

10   manager, and the instructions are further designed to perform the generating within the apparatus, an initial set of one or more data representations of one or more wire bodies by calling the shape manager to synthesize a wire body for one of the one or more edges.

26.   The apparatus of claim 21, wherein the instructions are further designed to

15   perform the generating within apparatus, a final data representation of a final wire body by

        setting within the apparatus, one of the initial set of one or more data representations of one of the initial one or more wire bodies as the final data representation of the final wire body, if the initial set of one or more data

20   representations of the initial one or more wire bodies consists of only one data representation of one wire body; and

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uniting within the apparatus, the initial set of one or more data representations of the initial one or more wire bodies to form the final data representation of the final wire body, if the initial set of one or more data representations of the initial one or more wire bodies comprises more than one data representation of more than one

5   wire body.

27.   The apparatus of claim 21, wherein the instructions are further designed to initialize within the apparatus, the final data representation of the final wire body as the data representation of the weld bead.

28.   The apparatus of claim 27, wherein the instructions are further designed to

10   facilitate specification within the apparatus, welding parameters of the weld bead.

29.   The apparatus of claim 27, wherein the instructions are further designed to facilitate persistent attribute assignment within the apparatus, a name for an edge of the weld bead.

30.   The apparatus of claim 29, wherein the instructions are further designed to

15   perform the persistent attribute assignment by retrieving one or more identifications identifying an edge of the one or more edges of the one or more components, including the component to which the edge is a part, associated with the edge of the weld bead.

31.   An apparatus comprising:

a storage medium having stored therein a plurality of instructions designed to enable the apparatus to

select within the apparatus an edge of a weld bead which data representation is formed based on one or more data representations of one or more edges of one or more components of an article of manufacture to be welded together using the weld bead at the one or more edges when manufacturing the article,

retrieve from a source within the apparatus, one or more identifications identifying an edge of the one or more edges of the one or more components, including the component to which the edge is a part, associated with the edge of the weld bead,

form a name attribute within the apparatus, based at least in part on the retrieved one or more identifications, and

assign within the apparatus, the name attribute to the selected edge of the weld bead; and

one or more processors coupled to the storage medium to execute the instructions.

32. The apparatus of claim 31, wherein the instructions are further designed to repeat the retrieving for each edge of each component associated with the edge of the weld bead; and

perform the forming based at least in part on all the retrieved identifications.

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33.   The apparatus of claim 32, wherein the instructions are further designed to repeat the selecting, retrieving, forming and assigning for each edge of the weld bead.